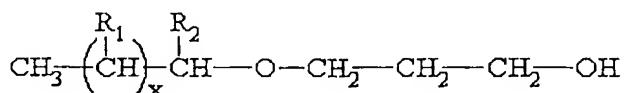


Rule 126 amendment  
Please read

of second set of numbers (40, 41 to 54)  
(Changed to 42-56)  
see inside

WE CLAIM:

1. A branched alcohol composition comprising a branched ether primary alcohol represented by the formula:



wherein  $\text{R}_1$  represents hydrogen or a hydrocarbyl radical having from 1 to 3 carbon atoms,  $\text{R}_2$  represents a hydrocarbyl radical having from 1 to 7 carbon atoms,  $x$  is a number ranging from 0 to 16, wherein the total number of carbon atoms in the alcohol ranges from 9 to 24.

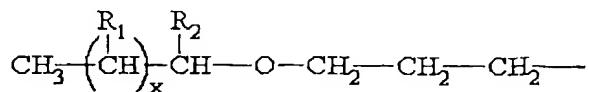
2. The branched alcohol composition of claim 1 wherein  $\text{R}_2$  is a hydrocarbyl radical having 1 carbon atom.

3. The branched alcohol composition of claim 2 wherein  $\text{R}_1$  is hydrogen.

4. The branched alcohol composition of claim 1 wherein  $x$  is a number ranging from 3 to 13.

5. An alkyl ether sulfate composition comprising an alkyl ether sulfate represented by the formula:

$\text{XOSO}_3\text{M}$ , wherein M is hydrogen or a cation, and X is represented by the formula



wherein  $R_1$  represents hydrogen or a hydrocarbyl radical having from 1 to 3 carbon atoms,  $R_2$  represents a hydrocarbyl radical having from 1 to 7 carbon atoms,  $x$  is a number ranging from 0 to 16, wherein the total number of carbon atoms in the alkyl ether sulfate ranges from 9 to 24.

6. The alkyl ether sulfate composition of claim 5 wherein M is hydrogen.

7. The alkyl ether sulfate composition of claim 5 wherein M is a cation effective to provide a water soluble alkyl ether sulfate composition.

8. The alkyl ether sulfate composition of claim 7 wherein M is selected from the group consisting of ammonium, alkanolammonium, monovalent metal cations, and polyvalent metal cations.

9. The alkyl ether sulfate composition of claim 5 wherein  $R_2$  is a hydrocarbyl radical having 1 carbon atom.

10. The alkyl ether sulfate composition of claim 9 wherein  $R_1$  is hydrogen.

11. The alkyl ether sulfate composition of claim 5 wherein x is a number ranging from 3 to 13.

12. The alkyl ether sulfate composition of claim 6 wherein  $R_2$  is a hydrocarbyl radical having 1 carbon atom.

13. The alkyl ether sulfate composition of claim 12 wherein  $R_1$  is hydrogen.

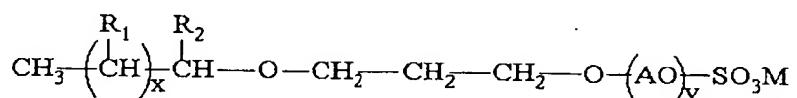
14. The alkyl ether sulfate composition of claim 6 wherein x is a number ranging from 3 to 13.

15. The alkyl ether sulfate composition of claim 7 wherein R<sub>2</sub> is a hydrocarbyl radical having 1 carbon atom.

16. The alkyl ether sulfate composition of claim 15 wherein R<sub>1</sub> is hydrogen.

17. The alkyl ether sulfate composition of claim 7 wherein x is a number ranging from 3 to 13.

18. An alcohol alkoxy sulfat ecomposition comprising an alcohol alkoxy sulfate represented by the formula:

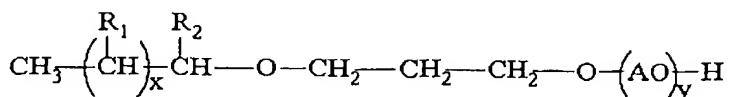


wherein R<sub>1</sub> represents hydrogen or a hydrocarbyl radical having from 1 to 3 carbon atoms, R<sub>2</sub> represents a hydrocarbyl radical having from 1 to 7 carbon atoms, x is a number ranging from 0 to 16, A is an alkylene radical having carbon number in the range of 2 to 4, y is a number ranging from 1 to 9, wherein the total number of carbon atoms in the alcohol alkoxy sulfate excluding A ranges from 9 to 24, and M is hydrogen or a cation.

19. The alcohol alkoxy sulfate composition of claim 18 wherein A is an alkylene radical having carbon number in the range of 2 to 3.

20. The alcohol alkoxyulfate composition of claim 19 wherein A is an alkylene radical having carbon number of 2.
21. The alkyl ether sulfate composition of claim 18 wherein M is hydrogen.
22. The alkyl ether sulfate composition of claim 18 wherein M is a cation effective to provide a water soluble alkyl ether sulfate composition.
23. The alkyl ether sulfate composition of claim 22 wherein M is selected from the group consisting of ammonium, alkanolammonium, monovalent metal cations, and polyvalent metal cations.
24. The alkyl ether sulfate composition of claim 18 wherein R<sub>2</sub> is a hydrocarbyl radical having 1 carbon atom.
25. The alkyl ether sulfate composition of claim 24 wherein R<sub>1</sub> is hydrogen.
26. The alkyl ether sulfate composition of claim 18 wherein x is a number ranging from 3 to 13.
27. The alkyl ether sulfate composition of claim 20 wherein R<sub>2</sub> is a hydrocarbyl radical having 1 carbon atom.
28. The alkyl ether sulfate composition of claim 27 wherein R<sub>1</sub> is hydrogen.
29. The alkyl ether sulfate composition of claim 20 wherein x is a number ranging from 3 to 13.

30. A branched alkanol alkoxylate composition comprising an alkanol alkoxylate represented by the formula:



wherein  $\text{R}_1$  represents hydrogen or a hydrocarbyl radical having from 1 to 3 carbon atoms,  $\text{R}_2$  represents a hydrocarbyl radical having from 1 to 7 carbon atoms,  $x$  is a number ranging from 0 to 16,  $A$  is an alkylene radical having carbon number in the range of 2 to 4,  $y$  is a number ranging from 1 to 9, wherein the total number of carbon atoms in the alkanol alkoxylate excluding  $A$  ranges from 9 to 24.

31. The branched alkanol alkoxylate composition of claim 30 wherein  $A$  is an alkylene radical having carbon number in the range of 2 to 3.

32. The branched alkanol alkoxylate composition of claim 31 wherein  $A$  is an alkylene radical having carbon number of 2.

33. The branched alkanol alkoxylate composition of claim 30 wherein  $\text{R}_2$  is a hydrocarbyl radical having 1 carbon atom.

34. The branched alkanol alkoxylate composition of claim 33 wherein  $\text{R}_1$  is hydrogen.

35. The branched alkanol alkoxylate composition of claim 30 wherein  $x$  is a number ranging from 3 to 13.

36. The branched alkanol alkoxylate composition of claim 32 wherein R<sub>2</sub> is a hydrocarbyl radical having 1 carbon atom.

37. The branched alkanol alkoxylate composition of claim 36 wherein R<sub>1</sub> is hydrogen.

38. The branched alkanol alkoxylate composition of claim 32 wherein x is a number ranging from 3 to 13.

39. A detergent composition comprising the alkyl ether sulfate composition of claim 5.

40. A detergent composition comprising the alkyl ether sulfate composition of claim 6.

41. A detergent composition comprising the alkyl ether sulfate composition of claim 7.

*Pull 126*  
42. A detergent composition comprising the alkyl ether sulfate composition of claim 9.

*43*  
41. A detergent composition comprising the alkyl ether sulfate composition of claim 11.

*44*  
42. A detergent composition comprising the alcohol ethoxysulfate composition of claim 18.

*45*  
43. A detergent composition comprising the alcohol ethoxysulfate composition of claim 20.

*46*  
44. A detergent composition comprising the alcohol ethoxysulfate composition of claim 22.

*47*  
45. A detergent composition comprising the alcohol ethoxysulfate composition of claim 24.

*48*  
46. A detergent composition comprising the alcohol ethoxysulfate composition of claim 26.

*49*  
47. A detergent composition comprising the alkanol alkoxylate composition of claim 30.

*50*  
48. A detergent composition comprising the alkanol alkoxylate composition of claim 32.

*51*  
49. A detergent composition comprising the alkanol alkoxylate composition of claim 33.

*52*  
50. A process to produce a branched alcohol composition comprising:

contacting an olefin having an average carbon number in the range of 3 to 18 with 1,3-propane diol in the presence of a catalyst effective to react the olefin with the diol under conditions effective to produce the branched alcohol composition.

*53*  
51. The process of claim 50 wherein the catalyst is an acid catalyst.

*54*  
52. The process of claim 51 wherein the average carbon number of the olefin is in the range of 6 to 18.

*55*  
53. The process of claim 51 wherein the diol and olefin is contacted at a temperature within the range of from 50 °C to 250 °C.

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58 )  
54. A process to produce a branched alkyl ether sulfate composition comprising:

- a) contacting an olefin having an average carbon number in the range of 3 to 18 with 1,3-propane diol in the presence of a catalyst effective to react the olefin with the diol thereby producing a branched alcohol composition; and
- b) contacting the branched alcohol composition with a sulfating agent under conditions effective to produce a branched alkyl ether sulfate composition.